(When Filled In)

R & D CATALOG FORM

DATE: 5 March 1965

1. PROJECT TITLE/CODE NAME

Film Processor Development Program

2. SHORT PROJECT DESCRIPTION

Continuation of the Processor Development Program to achieve conceptual and engineering advancement in the art and technology of film processing.

25X1

5. CLASS OF CONTRACTOR

Manufacturer

6. TYPE OF CONTRACT

CPFF

7. FUNDS

FY 1964

FY 1965

FY 19 $

8. REQUISITION NO.

N/A

9. BUDGET PROJECT NO.

NP-S-20

25X1

10. EFFECTIVE CONTRACT DATE *(Begin - end)*

June 1965 - December 1965

11. SECURITY CLASS.

AA - Confidential
T - Unclassified
W - Unclassified

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION

DDI/NPIC/P&DS

25X1

13. REQUIREMENT/AUTHORITY

Effort is directed toward providing both theoretical and conclusive answers to many of the unknown factors in the design and engineering of photographic film processors.

14. TYPE OF WORK TO BE DONE

Applied Research

15. CATEGORIES OF EFFORT

MAJOR CATEGORY	SUB-CATEGORIES
Special Techniques and Studies	Reproduction
	Processors

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.

Monthly letter progress reports, technical reports at significant stages and final report covering all aspects investigated, conclusions and recommendations.

17. SUPPORTING OR RELATED CONTRACTS *(Agency & Other)*/COORDINATION

Coordination with NRO, DOD, USAF, SPPL, GIMRADA and NRTSC has been effected.

18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT *(Continue on additional page if required)*

This investigative effort is directed toward providing theoretical as well as practical results in specified areas of research pertaining to continuous roll photographic film processors. The program, as instituted in June 1964, was to perform elementary studies, based on installation of a GFE clean-room facility and utilization of a GFE HTA/5 film processor. Because of the normal acquisition and installation required for a clean-room complex, considerable investigation had to be held in abeyance and as a result, full benefit of the first year's program could

19. APPROVED BY AND DATE

OFFICE	DEPUTY DIRECTOR	DDCI

FORM 11-64 2338

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18. not be realized.

The currently funded effort has resulted in completion of the clean-room facility, installation of the HTA/5 processor and a detailed report on investigations carried on that did not require clean-room operation. During this time substantial progress has been made in meeting the objectives set forth and work will continue under the present contract until 30 June 1965. A modular processor concept was studied and recommendations detailed. Two different types of both liquid and air bearings were studied. Experimental models of both were built and functional performance testing started. Results thus far are inconclusive. An investigation was conducted to identify and measure pressure losses in plumbing which produced significant results. Work was started to develop methods of obtaining values for film tension, bearing loads and vacuum capstan torque. Erection of the clean-room was started 23 November 1964 and is scheduled for specification compliance testing at the end of February 1965.

The continuation program is intended to carry to a logical conclusion those efforts that will not be completed with current year funding, together with some new investigations. For this continuation the contractor has proposed a six month, [redacted] level of effort to be carried out between 1 July 1965 and 31 December 1965. The following areas will be investigated: 25X1

1. Particle Contamination of Film -- An analytical study to determine the effect of foreign particles on the photographic interpretation of film transparencies. Particle size, grain structure, probability of information concealment and similar criteria will be studied to produce a mathematical statement on which the experimental program can be based.

2. Clean-room Experiments: Based on the criteria obtained in the Particle Contamination Analysis, controlled experimentation will be performed in the clean-room for evaluation of the theoretical results.

3. Air Bearing Design Evaluation: A continuation of the current effort. Designs will be evaluated for performance selection.

4. Liquid Bearing Design Evaluation: A continuation of the current effort. Designs will be evaluated for performance selection.

5. Testing of Air and Liquid Bearings: The HTA/5 Processor will be outfitted with mock-up tanks for functional testing of air and liquid bearings over a range of loads and speeds to determine capabilities.

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18.... 6. Vacuum Capstan Evaluation: A continuation of current effort. This will be expanded to include a design study to assess the problems involved in a modular capstan design incorporating its own power source. Time and funds permitting, an experimental capstan will be built and mounted on the HTA/5 take-up section for functional evaluation.

7. Air Squeegee Evaluation: Using the HTA/5 as a basic model, an evaluation of the operating criteria will be made. Varying air pressures and flow directions will be tested to determine the effects on water removal, film oscillation and efficiency.

Complete documentation of all effort will be submitted as monthly letter reports and final technical reports for each investigated area fully describing the study, the methods used, the conclusions and recommendations reached as a result of the work.